

CLAIMS

1. A method of operating an internal combustion engine in which fuel is combusted during a working stroke in at least one combustion chamber, comprising the steps of determining by a pressure sensor a gas pressure acting in the combustion chamber during the working stroke; monitoring a plausibility of a measuring variable obtained from a signal of the pressure sensor; determining, from a plurality of actual operational variables of the internal combustion engine, which are not based on the signal of the pressure sensor, a reference variable corresponding to the measuring variable; comparing the measuring variable with the reference variable; and by this comparison checking the plausibility of the signal of the pressure sensor and the measuring variable obtained from it.

2. A method as defined in claim 1; and further comprising determining time courses of the measuring variable and the reference variable within one working stroke and comparing the both courses with one another.

3. A method as defined in claim 2; and further comprising determining a maximum deviation of the measuring variable from the reference variable and comparing the maximum deviation with at least one limiting value.

4. A method as defined in claim 2; and further comprising determining a deviation of the measuring variable from the reference variable in equal time locations of the both courses, forming a sum value from said deviation; and comparing the sum value with at least one limiting value.

5. A method as defined in claim 1; and further comprising, depending on a result of the plausibility checking, performing a step selected from the group consisting of an input in an error storage, an information to a consumer of the internal combustion engine, and both.

6. A method as defined in claim 1; and further comprising performing the comparing of the measuring valuable with the reference valuable for a plurality of working strokes; and recognizing a non-plausibility of the signal of the pressure sensor or the measuring value derived from it when the comparing during a predetermined number of the working strokes leads to a corresponding result.

7. A method as defined in claim 1; and further comprising using as the measuring variable and the reference variable correspondingly a heat quantity which is normalized on a heat quantity supplied as a whole during a working stroke; determining the measuring variable from the signal of the pressure sensor on a basis of thermodynamic equations; and determining the reference variable by means of a vibe function.

8. A computer program which is programmable for use in a method of operating an internal combustion engine in which fuel is combusted during a working stroke in at least one combustion chamber,

comprising the steps of determining by a pressure sensor a gas pressure acting in the combustion chamber during the working stroke, monitoring a plausibility of a measuring variable obtained from a signal of the pressure sensor, determining, from a plurality of actual operational variables of the internal combustion engine which are not based on the signal of the pressure sensor, a reference variable corresponding to the measuring variable, comparing the measuring variable with the reference variable, and by this comparison checking the plausibility of the signal of the pressure sensor and the measuring variable obtained from it.

9. An electrical storage medium for a device of an internal combustion engine selected from the group consisting a control device, a regulating device, and both, the electrical storage medium storing a computer program which is programmable for use in a method of operating an internal combustion engine in which fuel is combusted during a working stroke in at least one combustion chamber, comprising the steps of determining by a pressure sensor a gas pressure acting in the combustion chamber during the working stroke, monitoring a plausibility of a measuring variable obtained from a signal of the pressure sensor, determining, from a

plurality of actual operational variables of the internal combustion engine which are not based on the signal of the pressure sensor, a reference variable corresponding to the measuring variable, comparing the measuring variable with the reference variable; and by this comparison checking the plausibility of the signal of the pressure sensor and the measuring variable obtained from it.

10. A device for an internal combustion engine selected from the group consisting of a control device, a regulating device, and both, said device being programmable for use in a method of operating an internal combustion engine in which fuel is combusted during a working stroke in at least one combustion chamber, comprising the steps of determining by a pressure sensor a gas pressure acting in the combustion chamber during the working stroke; monitoring a plausibility of a measuring variable obtained from a signal of the pressure sensor; determining, on the basis of a plurality of actual operational variables of the internal combustion engine which are not based on the signal of the pressure sensor, a reference variable corresponding to the measuring variable; comparing the measuring variable with the reference variable; and by this comparison checking the plausibility

of the sensor of the signal of the pressure sensor and the measuring variable obtained from it.